

Specification Sheet for Approved

Customer Name:	
Customer Part No.:	
Ceaiya Part No:	CCM2012F2 Series
Spec No:	C2012

【For Customer Approval Only】

If you Approval, Please Stamp

【RoHS Compliant Parts】

Approved By	Checked By	Prepared By
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Specification Sheet for SMD Power Inductor

【Version of Changed Record】

Rev.	Effective Date	Changed Contents	Change Reasons	Approved By
A0	2022-12-06	New release	/	Li qing hui

Specification Sheet for SMD Power Inductor

1. Features

- 1) High common mode impedance at high frequency effects excellent noise suppression performance.
- 2) CCM2012F2 series re realizes small size and low profile. 2.0*1.2*1.2mm
- 3) 100% Lead (Pb) & Halogen-Free and RoHS compliant.

2. Product Description and Identification (Part Number)

CCM 2012 F 2 - 300 T
① ② ③ ④ ⑤ ⑥

- ① Series
- ② Dimension
- ③ Material Ferrite Core
- ④ Number of Lines 2=2 lines
- ⑤ Impedance 300=30Ω
- ⑥ Taping and Reel

3. Shape and Dimensions (Unit:mm)

Dimensions and recommended PCB pattern for reflow soldering, please see Fig4-1 and Table4-1

Shape and Dimensions:

Recommended pad:

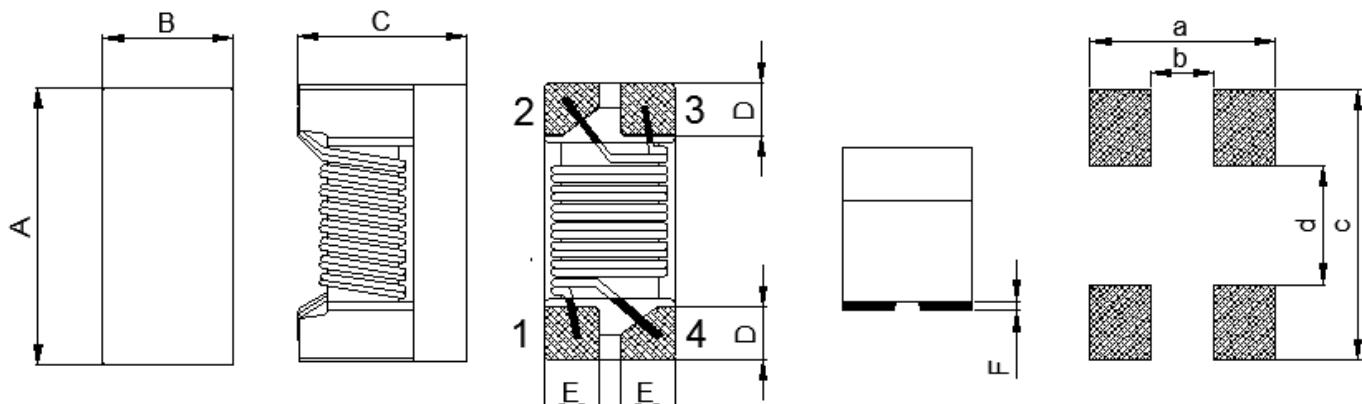


Fig4-1.

Table 4-1.

A	B	C	D	E	F	a	b	c	d
2.0±0.2	1.2±0.2	1.2±0.2	0.50±0.2	0.50±0.2	0.15 Ref	1.4 Ref	0.45 Ref	2.6 Ref	1.25 Ref

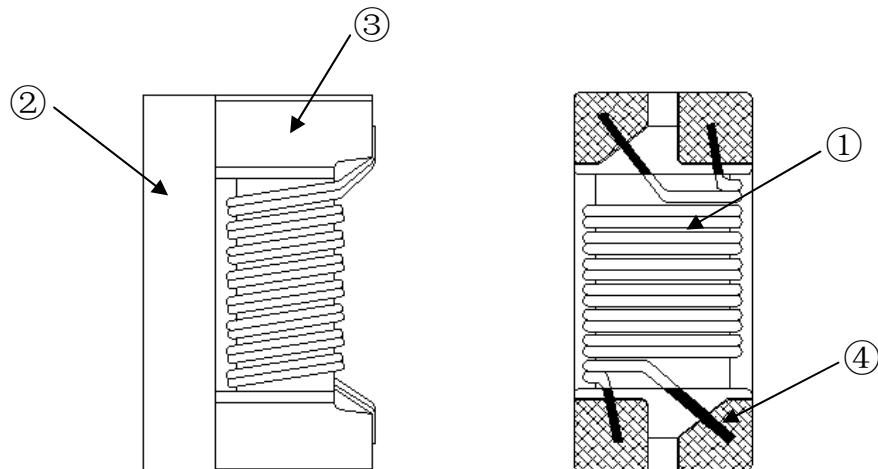
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4. Electrical Characteristics

Part Number	Common mode Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω)Max.	Rated Current (mA)	Rated Volt. (Vdc)	Withstand Volt. (Vdc) Max.	IR (Ω) Min.
CCM2012F2-300T	$30 \pm 25\%$	100	0.150	450	50	125	10M
CCM2012F2-670T	$67 \pm 25\%$	100	0.250	400	50	125	10M
CCM2012F2-750T	$75 \pm 25\%$	100	0.200	360	50	125	10M
CCM2012F2-900T	$90 \pm 25\%$	100	0.300	350	50	125	10M
CCM2012F2-121T	$120 \pm 25\%$	100	0.300	350	50	125	10M
CCM2012F2-801T	$800 \pm 25\%$	100	0.880	300	50	125	10M

5. Structure

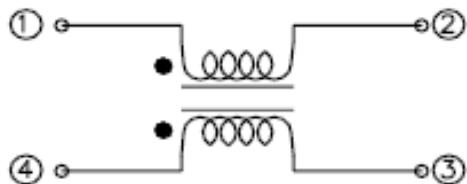
The structure of CCM2012F2 product.



No	Part	Material
①	WIRE	Grade 180
②	Cover sheet	Ferrite
③	CORE	Ferrite
④	TERMINAL	Ag/Cu/Ni/Sn

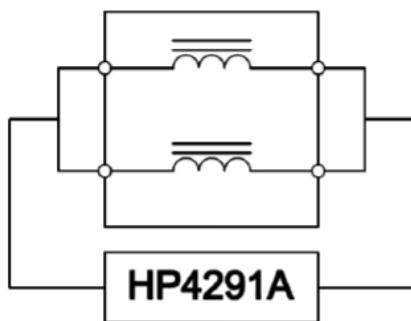
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5. Schematic Diagram

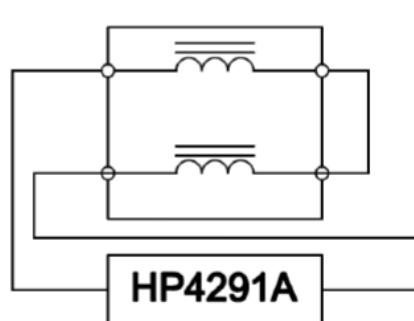


7. Measuring Circuits 2 line

Common mode



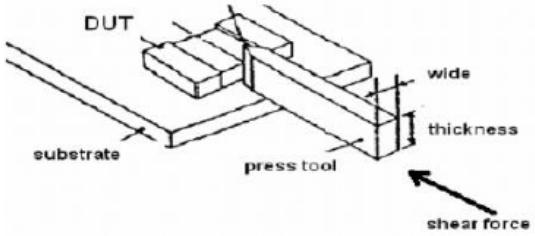
Differential mode



8. Reliability and Test Condition

Item	Performance	Test Condition
Operating temperature	-40°C~+125°C (Including self - temperature rise)	
Storage temperature	-40°C~+125°C (on board)	
Electrical Performance Test		
L(common mode)		Agilent -4291A+ Agilent - 16197A
DCR	Refer to standard electrical characteristics list.	Agilent -4338B
I.R.		Agilent 4339
Temperature Rise Test	Rated Current < 1A ΔT 20°C Max. Rated Current \geq 1A ΔT 40°C Max.	1. Applied the allowed DC current. 2. Temperature measured by digital surface thermometer.
Reliability Test		
Life Test	Appearance: No damage. Inductance: within $\pm 10\%$ of initial value RDC: within $\pm 15\%$ of initial value and shall not exceed the specification value	Preeconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020D Classification Reflow Profiles) Temperature: 125 ± 2 °C Applied current: rated current Duration: 1000 ± 12 hrs Measured at room temperature after placing for 24 ± 2 hrs

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Item	Performance	Test Condition															
Load Humidity		<p>Preeconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020D Classification Reflow Profiles)</p> <p>Humidity: 85±2°C R.H.</p> <p>Temperature: 85±2°C</p> <p>Duration: 1000hrs Min. with 100% rated current.</p> <p>Measured at room temperature after placing for 24±2hrs</p>															
Thermal shock	<p>Appearance: No damage.</p> <p>Inductance: within ±10% of initial value</p> <p>RDC: within ±15% of initial value and shall not exceed the specification value</p>	<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020D Classification Reflow Profiles)</p> <p>Step1: -40±2°C 30±5min</p> <p>Step2: 25±2°C ≤0.5min</p> <p>Step3: 125±2°C 30±5min</p> <p>Number of cycles: 500</p> <p>Measured at room temperature after placing for 24±2°C hrs</p>															
Vibration		<p>Oscillation Frequency: 10~2K~10Hz for 20 minutes</p> <p>Equipment: Vibration checker</p> <p>Total Amplitude: 1.52mm ±10%</p> <p>Testing Time: 12 hours (20 minutes, 12 cycles each of 3 orientations).</p>															
Shock	<p>Appearance: No damage.</p> <p>Inductance: within ±10% of initial value</p> <p>RDC: within ±15% of initial value and shall not exceed the specification value</p>	<table border="1"> <thead> <tr> <th>Type</th><th>Peak value (g's)</th><th>Normal Duration(D) (ms)</th><th>Wave form</th><th>Velocity Change (Vi) ft/sec</th></tr> </thead> <tbody> <tr> <td>SMD</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr> <tr> <td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr> </tbody> </table>	Type	Peak value (g's)	Normal Duration(D) (ms)	Wave form	Velocity Change (Vi) ft/sec	SMD	50	11	Half-sine	11.3	Lead	50	11	Half-sine	11.3
Type	Peak value (g's)	Normal Duration(D) (ms)	Wave form	Velocity Change (Vi) ft/sec													
SMD	50	11	Half-sine	11.3													
Lead	50	11	Half-sine	11.3													
Solder ability	More than 95% of the terminal electrode should be covered with solder	<p>Preheat: 150°C, 60sec.</p> <p>Solder: Sn99%, Ag0.3%, Cu0.7%</p> <p>Temperature: 245±5°C</p> <p>Flux for lead free: Rosin. 9.5%</p> <p>Dip time: 4 ± 1sec.</p> <p>Depth: completely cover the termination</p>															
Resistance to Soldering Heat		<p>Depth: completely cover the termination</p> <table border="1"> <thead> <tr> <th>Temperature (°C)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th><th>Number of heat cycles</th></tr> </thead> <tbody> <tr> <td>260 ±5 (solder temp)</td><td>10±1</td><td>25mm/s ± 6mm/s</td><td>1</td></tr> </tbody> </table>	Temperature (°C)	Time(s)	Temperature ramp/immersion and emersion rate	Number of heat cycles	260 ±5 (solder temp)	10±1	25mm/s ± 6mm/s	1							
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260 ±5 (solder temp)	10±1	25mm/s ± 6mm/s	1														
Terminal Strength	<p>Appearance: No damage.</p> <p>Inductance: within ±10% of initial value</p> <p>RDC: within ±15% of initial value and shall not exceed the specification value</p>	<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020D Classification Reflow Profiles)</p> <p>With the component mounted on a PCB with the device to be tested, apply a force(>0805: 1kg, <=0805:0.5kg) to the side of a device being tested. This force shall be applied for 60+1 a shock to the component being tested.</p> 															

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9. Soldering and Mounting

9-1 Soldering

Mildly activated rosin fluxes are preferred. terminations are suitable for all wave and re-flow soldering systems.

If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

9-1.1 Solder re-flow:

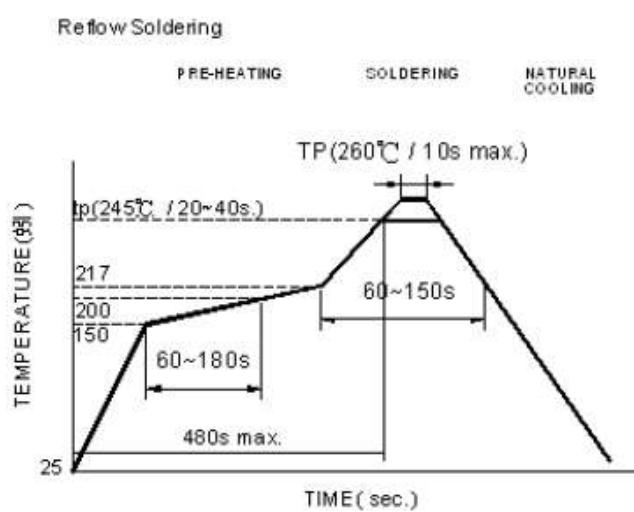
Recommended temperature profiles for re-flow soldering in Figure 1.

9-1.2 Soldering Iron (Figure 2):

Products attachment with a soldering iron is discouraged due to the inherent process control limitations.

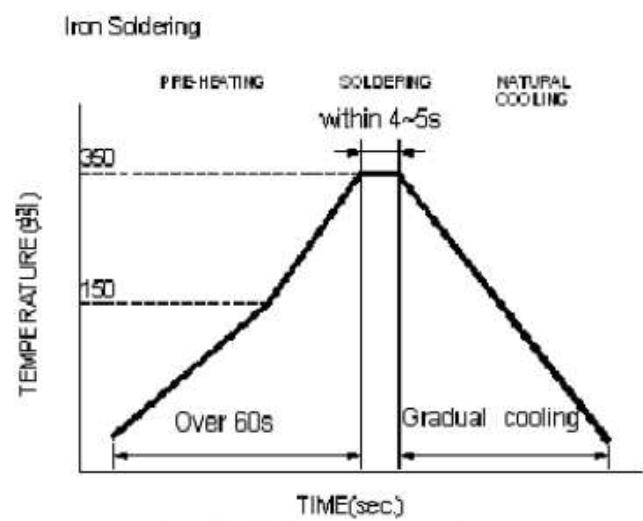
In the event that a soldering iron must be employed the following precautions are recommended.

Preheat circuit and products to 150°C	Never contact the ceramic with the iron tip	Use a 20 watt soldering iron with tip diameter of 1.0mm
355°C tip temperature (max)	1.0mm tip diameter (max)	Limit soldering time to 4~5 sec.



Reflow times: 3 times max.

Fig.1

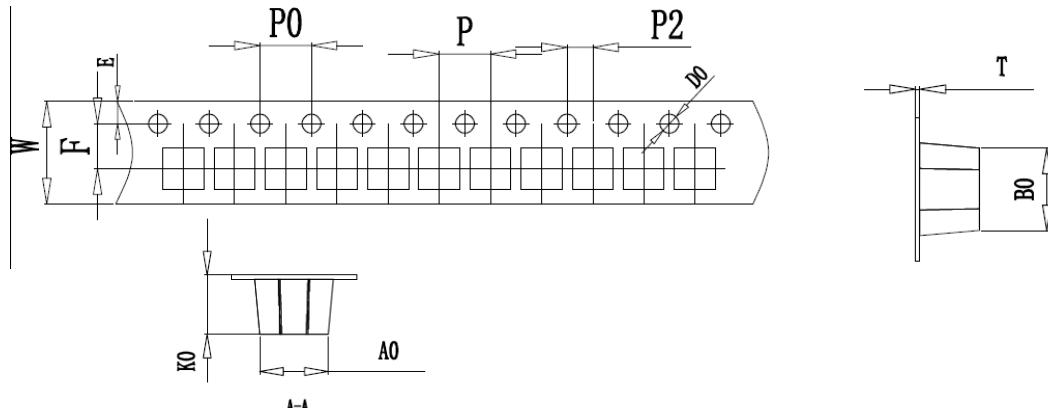


Iron Soldering times: 1 times max.

Fig.2

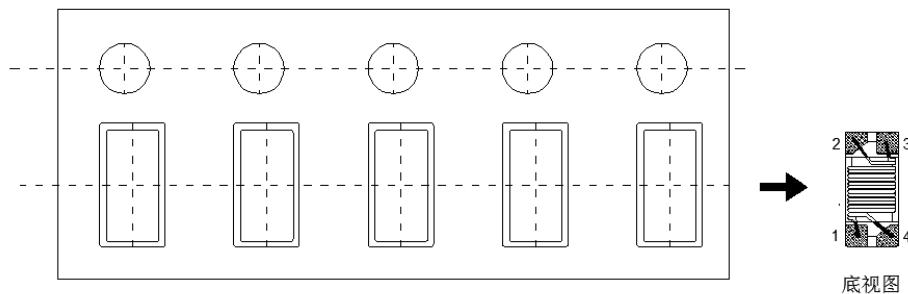
10. Packaging and Marking:

10-1. Carrier Tape Dimensions:



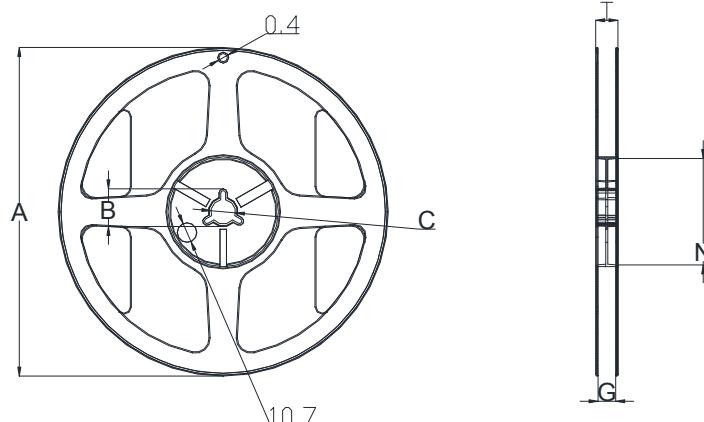
ITEM	W	A0	B0	K0	P	F	E	D0	P0	P2	T
DIM	8.00	1.45	2.4	1.5	4.00	3.5	1.75	1.50	4.00	2.00	0.25
TOLE	± 0.3	± 0.1	$+0.1$	± 0.1	± 0.1	± 0.05					

10-2. Taping Dimensions:



10-3. Reel Dimensions:

Carrier Tape Reel



Type	A	B	C	G	N	T
8mm	178	20.7 ± 0.8	13 ± 0.4	9	60	10.8

10-4. Packaging Quantity:

2KPCS/ Reel